

Tarea: Indique el MTBF, marca, modelo, y referencia de la información de dos componentes de red (routers, switches, servidores...), según sus especificaciones (0.3 ptos)\*.

#### Router: Cisco 812 ISR Specifications

| Description                        | C812G+7-K9(3G only)  | C812G-CIFI+7-E-K9C812G-CIFI+7-N-K9C812G-CIFI-V-A-K9C812G-CIFI-S-A-K9(3G + WiFi) |
|------------------------------------|--|---|
| Physical Characteristics           |  |   |
| Dimensions (H x W x D)             | 2.01 x 8.95 x 9.49 inches (51 x 227x 241 mm)   |   |
| Weight                             | 3.96 lbs (1.8 kg)  |   |
| Maximum Power Consumption          | 11 W   | 18 W  |
| Extended Shock-vibe                | No   |   |
| IP41 (with DC adapter)             | No   |   |
| Environmental Operating Ranges     |  |   |
| Operating Temperature and Altitude | −32 to 104 °F (0 to 40 °C)   |   |
|                                    | Derate max operating temperature 1.5 °C per 1000 ft above 5000 ft  |   |
|                                    | 10,000 ft maximum except CCC <u>1</u> only up to 2000 meters.  |   |
| Humidity                           | Maximum 85% non-condensing RH  |   |
| Ingress Protection Rating          | IP 20 per IEC 60529  |   |
| Standard Safety Certifications     | UL 60950-1, 2nd edition<br>CAN/CSA C22.2 No. 60950-1, 2nd edition<br>EN 60950-1, 2nd edition<br>CB to IEC 60950-1, 2nd edition with all group differences and national deviations<br>AS/NZS 60950-1, Edition 1 (Australia and New Zealand) |   |
| EMC Emissions                      | EN55022/CISPR22<br>CFR 47 Part 15<br>ICES003<br>VCCI-V-3<br>AS/NZS CISPR22<br>CNS13438<br>CISPR22<br>CNS13438<br>EN300-386<br>EN61000-3-2<br>EN61000-3-3<br>EN61000-6-1  |   |

|                                   |  |                                      |
|-----------------------------------|--|--------------------------------------|
| EMC Immunity                      | EN55024/CISPR24 (EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11)<br>EN300-386 |                                      |
| Radio Immunity                    | EN301 489-1, EN 301 489-7, and EN301 489-24  |                                      |
| Transportation/Storage Conditions |  |                                      |
| Temperature                       | −40 to158 °F (−40 to 70°C)   |                                      |
| Humidity                          | 5–95%  |                                      |
| Altitude                          | 4570 m (15,000 ft)   |                                      |
| AC Power Adapter                  |  |                                      |
| Power Source                      | 100–240 VAC  |                                      |
| In-ceiling Plenum                 | No   |                                      |
| IP41                              | No   |                                      |
| Extended Shock-vibe               | No   |                                      |
| Maximum Power Consumption         | 25 W   |                                      |
| Maximum Output Power Rating       | 20 W   |                                      |
| Operating Temperature             | −13 to 140 °F (−25 to 60 °C)   |                                      |
| PoE+ Splitter                     |  |                                      |
| Power Source                      | PoE+ (IEEE802.3at Class 4)   |                                      |
| In-ceiling Plenum                 | Yes  |                                      |
| IP41                              | No   |                                      |
| Extended Shock-vibe               | No   |                                      |
| Maximum Power Consumption         | 25 W   |                                      |
| Maximum Output Power Rating       | 20 W   |                                      |
| Operating Temperature             | −13 to 140 °F (−25 to 60 °C)   |                                      |
| Embedded WiFi Antenna             |  |                                      |
| Frequency Range                   | —  | 2.4–2.5 Ghz<br>4.9–5.875 Ghz         |
| Peak Gain                         | —  | 4 dBi (2.4 GHz)<br>6 dBi (5.875 Ghz) |
| Voltage Standing Wave Ratio       | —  | 2.5:1 maximum for all bands          |
| Nominal Impedance                 | —  | 50 ohms                              |

Switches : Catalyst 2960-X

| Environmental Ranges  |   |
|-----------------------|---|
| Operating temperature | 23 to 113°F (–5 to 45°C) up to 5,000 ft (1500 m) <sup>[1]</sup> |
| <sup>1</sup>          | 23 to 104°F (–5 to 40°C) up to 10,000 ft (3000 m)               |
| Storage temperature   | –40 to 158°F (–40 to 70°C) up to 15,000 ft (4500 m)             |
| Relative humidity     | 10 to 95% (noncondensing)                                       |
| Storage altitude      | Up to 15,000 ft (4500 m)  |

<sup>1</sup> Minimum ambient temperature for cold start is 32°F (0°C)

### Specifications for the Catalyst 2960-X Switches

| Table 2 Catalyst 2960X-48FPD-L, 2960X-48LPD-L, 2960X-24PD-L, 2960X-48FPS-L, 2960X-48LPS-L, and 2960X-24PS-L Switch Specifications |  |
|---|--|
| Power Requirements  |  |
| AC input voltage  | <p>100 to 240 VAC (autoranging)</p> <ul style="list-style-type: none"> <li>9 to 4 A, 50 to 60 Hz (Catalyst 2960X-48FPD-L)<sup>[1]</sup></li> <li>5 to 2 A, 50 to 60 Hz (Catalyst 2960X-48LPD-L)</li> <li><sup>[1]</sup>5 to 2 A, 50 to 60 Hz (Catalyst 2960X-24PD-L)<sup>[1]</sup></li> <li>9 to 4 A, 50 to 60 Hz (Catalyst 2960X-48FPS-L)</li> <li><sup>[1]</sup>5 to 2 A, 50 to 60 Hz (Catalyst 2960X-48LPS-L)<sup>[1]</sup></li> <li>5 to 2 A, 50 to 60 Hz (Catalyst 2960X-24PS-L)</li> </ul> |
| DC input voltage for RPS 2300   | <ul style="list-style-type: none"> <li>+12 V @ 4 A, –53 V @ 15 A (Catalyst 2960X-48FPD-L)<sup>[1]</sup></li> <li>+12 V @ 4 A, –53 V @ 8 A (Catalyst 2960X-48LPD-L)<sup>[1]</sup></li> <li>+12 V @ 3A, –53 V @ 8 A (Catalyst 2960X-24PD-L)</li> <li><sup>[1]</sup>12 V @ 4 A, –53 V @ 15 A (Catalyst 2960X-48FPS-L)<sup>[1]</sup></li> <li>+12 V @ 4 A, –53 V @ 8 A (Catalyst 2960X-48LPS-L)<sup>[1]</sup></li> </ul>   |

|  |   |
|--|---|
|  | <ul style="list-style-type: none"> <li>+12 V @ 3 A, -53 V @ 8 A (Catalyst 2960X-24PS-L)</li> </ul>  |
| <b>Power consumption</b>   | <ul style="list-style-type: none"> <li>149 W, 508 BTUs per hour (Catalyst 2960X-48FPD-L)<sup>[1][SEP]</sup></li> <li>103 W, 351 BTUs per hour (Catalyst 2960X-48LPD-L)<sup>[1][SEP]</sup></li> <li>92 W, 313 BTUs per hour (Catalyst 2960X-24PD-L)<sup>[1][SEP]</sup></li> <li>149 W, 508 BTUs per hour (Catalyst 2960X-48FPS-L)</li> <li>102 W, 348 BTUs per hour (Catalyst 2960X-48LPS-L)</li> <li>90 W, 307 BTUs per hour (Catalyst 2960X-24PS-L)</li> </ul> |
| <b>Power rating</b>  | <ul style="list-style-type: none"> <li>0.89 KVA (Catalyst 2960X-48FPD-L)<sup>[1][SEP]</sup></li> <li>0.48 KVA (Catalyst 2960X-48LPD-L)<sup>[1][SEP]</sup></li> <li>0.47 KVA (Catalyst 2960X-24PD-L)<sup>[1][SEP]</sup></li> <li>0.89 KVA (Catalyst 2960X-48FPS-L)<sup>[1][SEP]</sup></li> <li>0.49 KVA (Catalyst 2960X-48LPS-L)<sup>[1][SEP]</sup></li> <li>0.49 KVA (Catalyst 2960X-24PS-L)</li> </ul>   |
| <b>PoE+</b>  |   |
| <ul style="list-style-type: none"> <li>30 W-per-port maximum, 740-W switch maximum<sup>[1][SEP]</sup> (Catalyst 2960X-48FPD-L and 2960X-48FPS-L switches)<sup>[1][SEP]</sup></li> <li>15.4 W-per-port maximum, 370-W switch maximum<sup>[1][SEP]</sup> (Catalyst 2960X-48LPD-L, 2960X-24PD-L, 2960X-48LPS-L, and 2960X-24PS-L switches)</li> </ul> |   |
| <b>Physical Dimensions</b>   |   |
| <b>Weight</b> <sup>[1][SEP]</sup>  | <ul style="list-style-type: none"> <li>12.9 lb (5.8 kg) (Catalyst 2960X-48FPD-L)<sup>[1][SEP]</sup></li> <li>12.8 lb (5.8 kg) (Catalyst 2960X-48LPD-L)<sup>[1][SEP]</sup></li> <li>12.7 lb (5.8 kg) (Catalyst 2960X-24PD-L)</li> <li>13.2 (6.0 kg) (Catalyst 2960X-48FPS-L)<sup>[1][SEP]</sup></li> <li><sup>[1][SEP]</sup>12.9 lb (5.8 kg) (Catalyst 2960X-48LPS-L)<sup>[1][SEP]</sup></li> <li>12.8 lb (5.8 kg) (Catalyst 2960X-24PS-L)</li> </ul>            |
| <b>Dimensions (H x D x W)</b>  | 1.75 x 14.50 x 17.5 in. (4.45 x 36.83 x 44.5 cm).<br>Applies to all PoE switches.   |

<sup>2</sup> Power consumption values for the power consumed internally by the switch at 120 VAC 60 Hz.

<sup>3</sup> Power rating values for the switch input power.

| Table 3 Catalyst 2960X-48TD-L, 2960X-24TD-L, 2960X-48TS-L, 2960X-24TS-L, 2960X-48TS-LL, 2960X-F24TS-LL, Switch Specifications |  |
|---|--|
| Power Requirements  |  |
| AC input voltage <sup>[SEP]</sup>   | <p>100 to 240 VAC (autoranging)</p> <ul style="list-style-type: none"> <li>1 to 0.5 A, 50 to 60 Hz (Catalyst 2960X-48TD-L)</li> <li>1 to 0.5 A, 50 to 60 Hz (Catalyst 2960X-24TD-L)</li> <li>1 to 0.5, 50 to 60 Hz (Catalyst 2960X-48TS-L)</li> <li>1 to 0.5 A, 50 to 60 Hz (Catalyst 2960X-24TS-L)<sup>[SEP]</sup></li> <li>1 to 0.5 A, 50 to 60 Hz (Catalyst 2960X-48TS-LL)</li> <li>1 to 0.5 A,, 50 to 60 Hz (Catalyst 2960X-24TS-LL)<sup>[SEP]</sup></li> </ul>                              |
| DC input voltage for RPS 2300 <sup>[SEP]</sup>  | <ul style="list-style-type: none"> <li>+12 V @ 4 A, -53 V @ 8 A (Catalyst 2960X-48TD-L)<sup>[SEP]</sup></li> <li>+12 V @ 3 A, (Catalyst 2960X-24TD-L)<sup>[SEP]</sup></li> <li>+12 V @ 5 A, (Catalyst 2960X-48TS-L)</li> <li><sup>[SEP]</sup>+12 V @ 4 A, (Catalyst 2960X-24TS-L)</li> </ul>   |
| Power consumption <sup>[SEP]</sup>  | <ul style="list-style-type: none"> <li>47 W, 161 BTUs per hour (Catalyst 2960X-48TD-L)<sup>[SEP]</sup></li> <li>32 W, 110 BTUs per hour (Catalyst 2960X-24TD-L)<sup>[SEP]</sup></li> <li>49 W, 168 BTUs per hour (Catalyst 2960X-48TS-L)<sup>[SEP]</sup></li> <li>37 W, 126 BTUs per hour (Catalyst 2960X-24TS-L)<sup>[SEP]</sup></li> <li>55 W, 187 BTUs per hour (Catalyst 2960X-48TS-LL)<sup>[SEP]</sup></li> <li>37 W, 126 BTUs per hour (Catalyst 2960X-24TS-LL)<sup>[SEP]</sup></li> </ul> |
| Power rating <sup>3</sup>   | <ul style="list-style-type: none"> <li><sup>[SEP]</sup>0.049 KVA (Catalyst 2960X-48TD-L)</li> <li>0.034 KVA (Catalyst 2960X-24TD-L)<sup>[SEP]</sup></li> <li>0.051 KVA (Catalyst 2960X-48TS-L)<sup>[SEP]</sup></li> </ul>  |

|                        |  |
|------------------------|--|
|                        | <ul style="list-style-type: none"> <li>• 0.039 KVA (Catalyst 2960X-24TS-L)</li> <li>• 0.46 KVA (Catalyst 2960X-48TS-LL)</li> <li>• 0.035 KVA (Catalyst 2960X-24TS-LL)</li> </ul> |
| Physical Dimensions    |  |
| Weight                 | 9.6 lb (4.3 kg) Catalyst 2960X-48TD-L  |
| Dimensions (H x D x W) | 8.9 lb (4.0 kg) Catalyst 2960X-24TD-L  |
|                        | 9.4 lb (4.2 kg) Catalyst 2960X-48TS-L  |
|                        | 8.9 lb (4.0 kg) Catalyst 2960X-24TS-L  |
|                        | 8.9 lb (4.0 kg) Catalyst 2960X-48TS-LL   |
|                        | 8.2 lb (3.7 kg) Catalyst 2960X-24TS-LL   |
|                        | 1.75 x 11 x 17.50 in. (4.45 x 27.94 x 44.5 cm) All non-PoE switches.   |

## References:

## Routers:

<https://www.cisco.com/c/en/us/td/docs/routers/access/800/hardware/installation/guide/800HIG/appendix.html#88259>

## Switches:

[https://www.cisco.com/en/US/docs/switches/lan/catalyst2960x/hardware/installation/guide/b\\_c2960x\\_hig\\_appendix\\_0100.html](https://www.cisco.com/en/US/docs/switches/lan/catalyst2960x/hardware/installation/guide/b_c2960x_hig_appendix_0100.html)